
ISL installation for all systems

ISL configurations

The ISDN Signaling Link (ISL) feature operates in two modes (Figure 39):

- Shared mode—One DCH supports PRI with DTI or analog.
- Dedicated mode—In this mode, the DCH supports *only* ISL trunks using ISDN PRI signaling. The D-channel communicates with the far end using a dedicated leased line, dial-up modem, or DTI trunk.

It is recommended that leased lines be data conditioned from the Central Office to ensure the integrity of the ISL configuration.

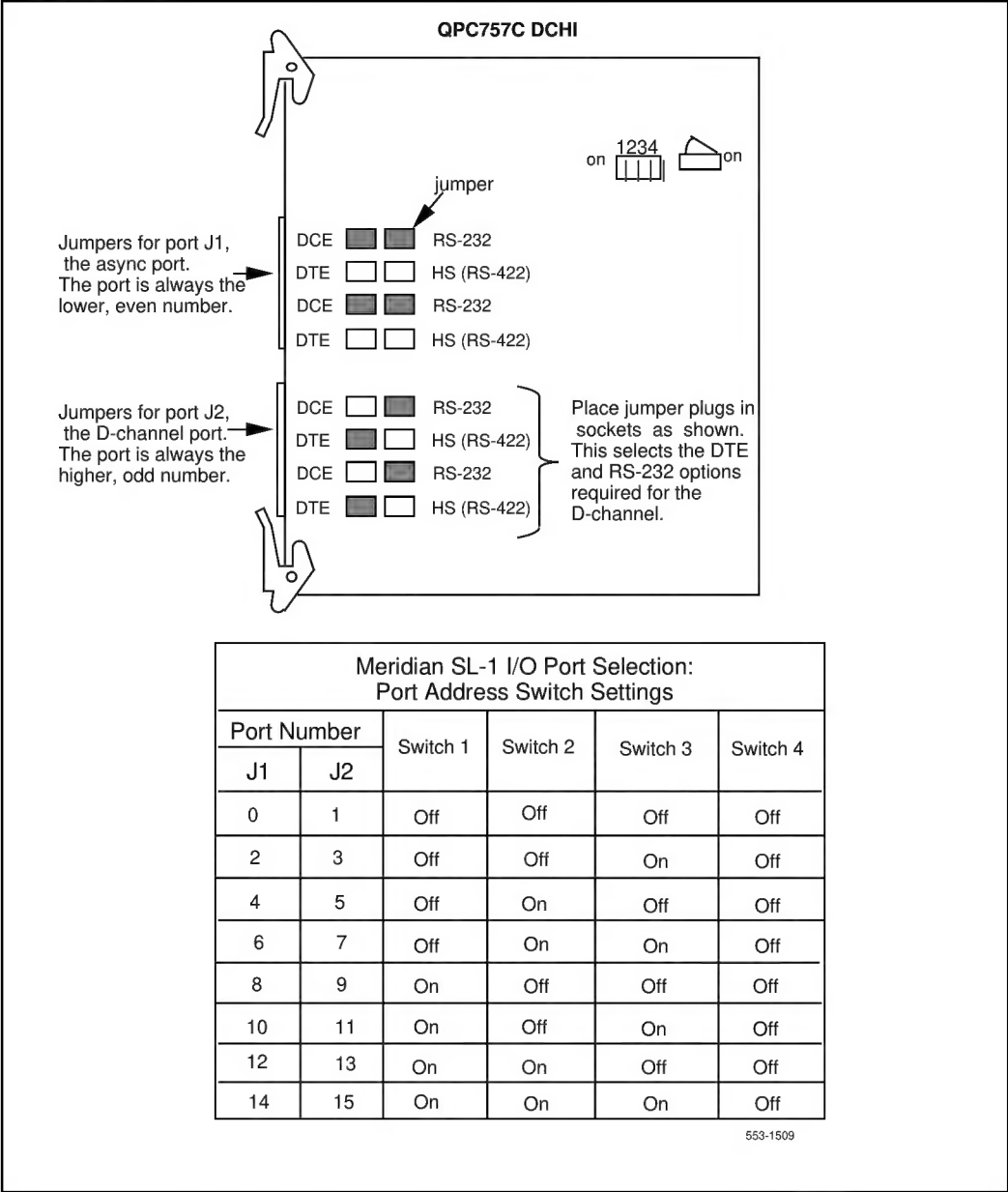
DCHI switch settings

For ISL functions, use the following switch settings for the J2 port:

- DTE for high speed programming

Note: For ISL low speed programming, see the DCHI installation section of this document.
- RS-232 for 19.2 Kbps and below
- HS for speed above 19.2 Kbps
- External clock (in LD 17) provided by modem, ADM, or ASIM, otherwise DCH runs at 64 Kbps

Figure 39
ISL settings

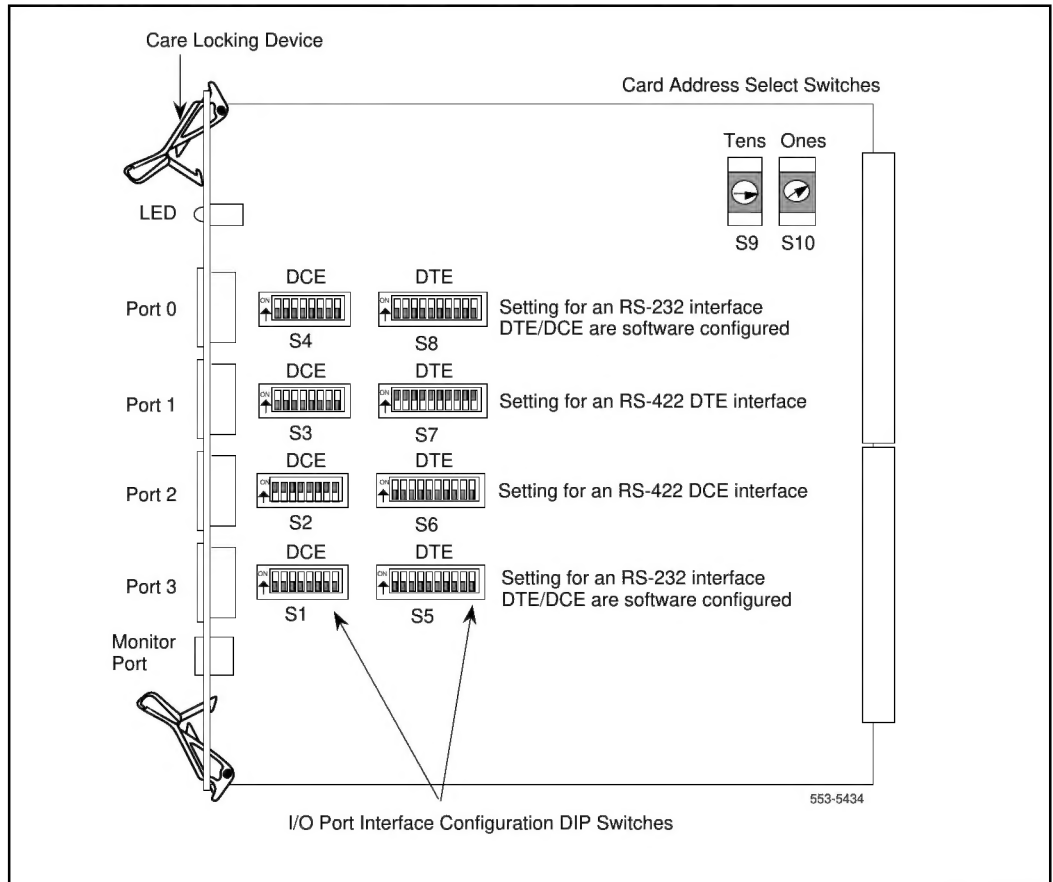


MSDL switch settings

For ISL functions, use the following switch settings (**Figure 40**):

- DTE for high speed programming
- RS-232 for 19.2 Kbps and below
- External clock (in LD 17) provided by modem, ADM, ASIM, or HSDM, otherwise DCH runs at 64 Kbps

Figure 40
MSDL/ISL settings



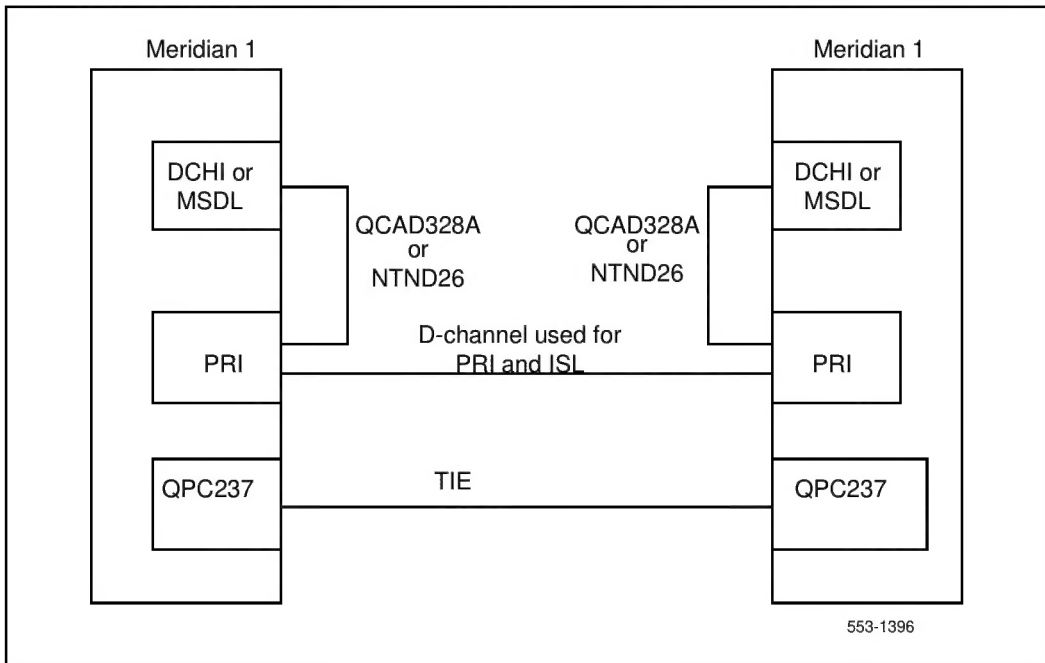
Shared mode

In shared mode, the D-channel is provided by the DCHI or MSDL card and PRI. The hardware configuration is basically the same as the ISDN PRI D-channel. See [Figure 41](#).

Shared mode is established through service change in LD 17, prompt USR, with the response SHA.

In the shared mode, the DCH can share signaling for no more than 382 trunks, including digital and analog.

Figure 41
ISL in shared mode

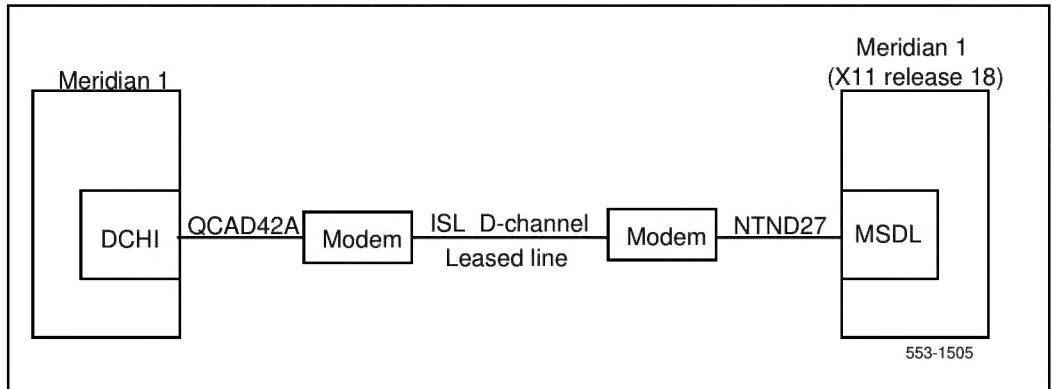


Dedicated mode using leased line

In this configuration, the D-channel connects the DCHI or MSDL to a modem, which communicates with a far-end modem over a dedicated leased line. See [Figure 42](#). A 2400-baud D-channel can support signaling for approximately 700 trunks without noncall associated messages.

Both modems should be set in the synchronous mode.

Figure 42
ISL dedicated mode: using leased line



Dedicated mode using dial-up modem

In this configuration, the DCHI or MSDL is connected to a modem, which is connected to a 500 set line card. See [Figure 43](#). The call is connected to the far end through the 500 set-to-tie trunk path.

To set up the D-channel, program the modem at one end in the auto-dial mode, so it automatically initiates a call to the other end at power up. The autodial DN must be coordinated with personnel at the far end switch.

Installing the Hayes Smartmodem 2400

The software and hardware of the Hayes Smartmodem 2400 must be installed sequentially. The Hayes Smartmodem 2400 software must be defined before the hardware connection between the Hayes Smartmodem 2400 and the Meridian 1 can be made. Within the software installation, either the autodial or the autoanswer software can be set up first.

Examples of parameters used for actual autoanswer and autodial sites are shown on the following pages. The *Hayes Smartmodem 2400 User's Guide* contains explanations of the parameters used.

After the software parameters have been set up, the JP1 jumpers behind the front faceplate of the Hayes Smartmodem 2400 must be dumb strapped on both modems. Then see the *Hayes Smartmodem 2400 Getting Started Guide* to set up the hardware between the Meridian 1 and the modem.

Note: The Hayes Smartmodem 2400 cannot be used on leased, conditioned lines.

Figure 43
ISL dedicated mode: using dial-up Hayes Smartmodem 2400

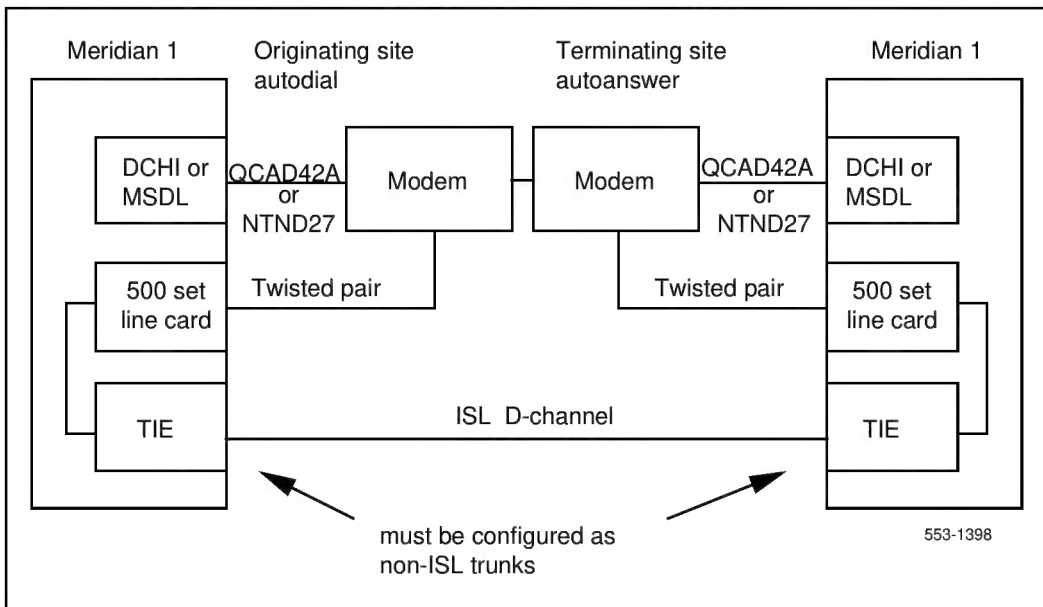


Table 44 identifies the signals sent from the pack to the modem, the signals the pack requires from the modem, and the state of the modem.

Table 44
Pin assignment for D-channel RS-232 interface

PIN #	Description	Designation			Direction		State	
		EIA	CCITT	COM MON	To DTE	To DCE	0 Space On	1 Mark Off
1	frame gnd	AA	101	FG				
2	tx data	BA	103	TxD		X	+12V	-12V
3	rx data	BB	104	RxD	X		+12V	-12V
4	req to send	CA	105	RTS		X	+12V	-12V
5	clr to send	CB	106	CTS	X		+12V	-12V
6	data set rdy	CC	107	DSR	X		+12V	-12V
7	signal gnd	AB	102	SG				
8	data ckr detect	CF	109	DCD	X		+12V	-12V
9–14	(not connected)							
15	tx clock	DB	114	SCT	X		+12V	-12V
16	(not connected)							
17	rx clock	DD	115	SCR	X		+12V	-12V
18–19	(not connected)							
20	data term rdy	CD	108.2	DTR		X	+12V	-12V
21–22	(not connected)							
23	data rate sel	CH	111	DRS		X	+12V	-12V
24	ext tx clock	DA	113	SCTE		X	+12V	-12V
25	(not connected)							

Dedicated mode using PRI/DTI trunks

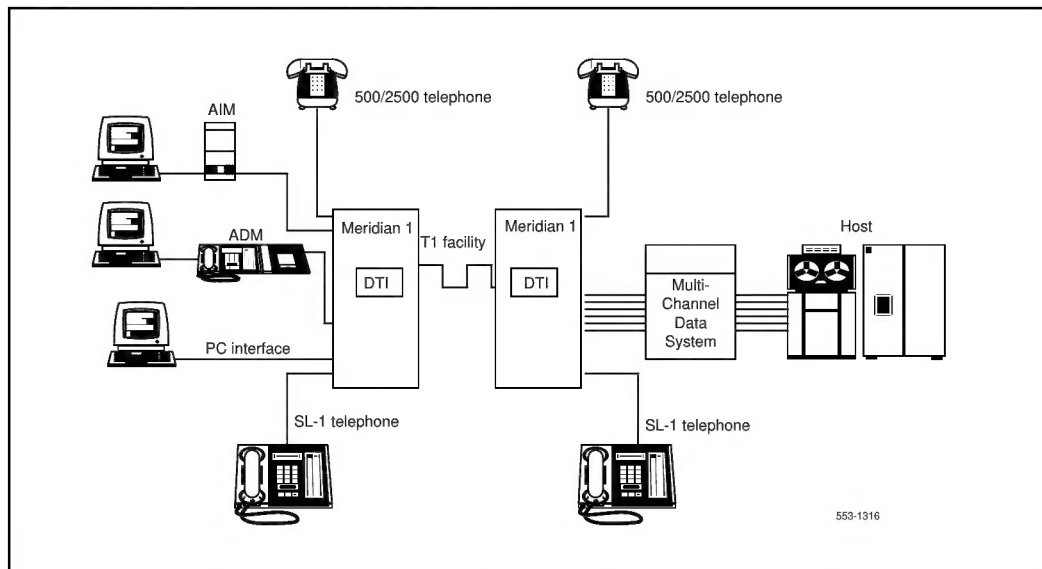
In this configuration, the DCHI or MSDL is connected to a High Speed Data Module (HSDM) or Asynchronous/Synchronous Interface Module (ASIM). See [Figure 44](#). The HSDM or ASIM is connected to a Data Line Card (DLC). The call is then connected to the far end through the DLC to DTI trunk path.

To establish the D-channel in this configuration, set up the HSDM or ASIM at one end in hot line mode. The hot line DN must be coordinated with personnel at the far end, then programmed in LD 11. The preprogrammed hot line DN is dialed by the Meridian 1. If the call cannot be established, the Meridian 1 continues to dial the hot line number continuously until the call is connected.

Set the HSDM or ASIM in synchronous mode. A data rate of 9.6 Kbps is recommended because it provides internal error detection and correction. The following data rates are also supported: 1.2 Kbps, 2.4 Kbps, 3.6 Kbps, 4.8 Kbps, 7.2 Kbps, 14.4 Kbps, 19.2 Kbps, 38.4 Kbps, and 56 Kbps for ASIM. The High Speed Data Module (HSDM) supports 64 Kbps.

Note: This configuration is the least reliable because of the lockup problems inherent in smart modems from power splices and noisy lines. To increase the reliability of this configuration, a constant power source can be used when powering the modems. Also ensure that the tie lines meet data grade specifications. Northern Telecom takes no responsibility for ISL D-channel outages due to modem lockup.

Figure 44
ISL dedicated mode: using PRI/DTI trunk



QMT11 switch settings—If using the QMT11 ASIM, set the dip switches, located on top of the unit under the flip-up, as follows:

— Hotline	On; See Note 1.
— Forced DTR	On; See Note 2.
— FDX (full duplex)	On
— SYNC	On
— INTERNAL CLK	On
— Modem/Network	Modem
— Auto Answer	On
— Loopback	Off

Note 1: Set only one side of the interface to originate the hot line.

Note 2: Forced Data Terminal Ready (DTR) automatically reinitiates a dropped hot line call.

QMT21C switch settings—If using the QMT21 HSDM, set the dip switches, located on top of the unit under the flip-up, as follows.

— Hotline	On; See Note 1.
— Forced DTR	On; See Note 2.
— FDX (full duplex)	On
— SYNC	On
— INternal CLK	On
— Modem/Network	Modem
— Auto Answer	On
— Loopback	Off

Note 1: Set only one side of the interface to originate the hot line.

Note 2: Forced Data Terminal Ready (DTR) automatically reinitiates a dropped hot line call.

ISL installation

The following procedures explain the installation for ISL in both dedicated and shared modes.

Modem paths must have individual configurations such as route data blocks, trunks, and routes.

ISL dedicated mode (digital and analog)

DTI should already be up and running.

- 1 In LD 17, configure ISL for dedicated mode.
USR ISLD
ISLM Number of trunks handled by this D-channel (1–382)
- 2 In LD 16, configure the Route Data Block to map out the software parameters for these trunks.
- 3 Install the modem with leased line functionality.
- 4 In LD 14, reassign old trunks to the routes just built in LD 16.
- 5 In LD 16, delete the old DTI route. A separate Route Data Block should be built for a leased line or for a dedicated modem dialing plan.

ISL shared mode

DTI or PRI should already be up and running.

- 1 In LD 14, remove the PRI trunks.
- 2 In LD 17, configure ISL for dedicated mode.
USR SHA
ISLM Number of trunks handled by this D-channel (1–382)
- 3 In LD 16, build a PRI Route Data Block. This is the same route you just removed in step 1.
ISDN YES
- 4 In LD 16, build another Route Data Block to correspond to the IAS routes.
- 5 In LD 14, assign trunks to the newly configured routes.